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7/3/13	8	8-425 and 426	41-44 and 1-9
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7/3/13	8	8-89; 8-90	Tables 8-28, 8-29, para 4
7/3/13	8	8-90	Para 4

7/3/13	8	8-93	Para 2
7/3/13	8	8-459	Para 6
7/3/13	8	8-460-462	Impact WQ 26, Mitigation Measure WQ 26

7/3/13	8M	8M-19	Table 5M
7/3/13	8M	8M-19	

Comment	Agency	Agency Type
Is there a section that explains how the 72 water quality constituents identified in Table SA-11 "WQ constituents for which detailed assessment were performed" (page 8C-40) were narrowed into the 15 WQ metrics evaluated for CM1?	USEPA	Cooperating
A table that shows how each CM1 alternative meets or exceeds narrative and numeric water quality standards for the water quality constituents that received more detailed analysis should be created. This comparison is important for NEPA disclosure and for permits, authorizations, and certifications that will be needed to build CM1.	USEPA	Cooperating
This discussion should include text that discloses concerns scientists have with existing selenium criteria not being protective enough of aquatic life (see discussion on page 17 in US EPA Bay Delta Action Plan available at http://www2.epa.gov/sites/production/files/documents/actionplan.pdf), and plans to update selenium criteria. A useful example of this information is on pages 32 and 33 of US EPA Unabridged Advance Notice of Proposed Rulemaking for Water Quality Challenges in the San Francisco Bay/Sacramento-San Joaquin Delta available at http://www2.epa.gov/sites/production/files/documents/baydeltaanpr-fr_unabridged.pdf	USEPA	Cooperating

Further describe the relationship between hydrodynamics and open water aquatic habitat such as year-round anticipated changes to the salinity gradient, quality and quantity of the low salinity zone, continuity of San Joaquin river water from Vernalis to the Delta and migratory corridors for returning adult salmon, and continuity of dissolved oxygen levels along that corridor. Aquatic habitat discussion may be better organized into Chapter 11 but this section on Delta Hydrodynamics is connected and relevant to the relationship between WQ elements and the quality and quantity of open water habitats. It could be much more robust than the information presented, which is focused on meeting WQ objectives due to hydrodynamics changes. If this discussion is not included here, a reference should be provided to such a discussion in Chapter 11.	USEPA	Cooperating
This section should provide all of the changes to outflow associated with each alternative H1-H4 relative to existing conditions and no action alternative (some of this is in Ch 5 but since it is referenced here it should be discussed). It should also provide the percent change for H1-H4 relative to existing conditions and no action alternative.	USEPA	Cooperating
The conclusion that the preferred alternative results in increased sea water intrusion in all years in addition to conclusions about EC levels in the southern Delta (see page 8-425 and -426) shows a high potential for substantially negative impacts on the quality and quantity of open water aquatic habitats such as the low salinity zone (0.5-6 ppt salinity), and migratory corridors for salmonids. An analysis of changes to the salinity-gradient and the quality and quantity of open water aquatic habitats is necessary for evaluating impacts to aquatic resources that use specific zones along these gradients as part of their primary habitat for all of part of their life cycle.	USEPA	Cooperating
We recommend making comparisons to the 2009 draft EPA ammonia aquatic life criteria.	USEPA	Cooperating

The project impacts from bromide to drinking water supplies appears to exceed water quality standards by reducing water quality for the municipal beneficial use below appropriate protection levels.	USEPA	Cooperating
Making beneficial use impairments measurably worse and exceeding chloride objectives presents significant challenges for concluding that the preferred alternative protects aquatic life and/or the Delta ecosystem. These conclusions also present a significant permitting challenge for CM1. Granting a CWA Section 404 permit is prohibited for projects that violate State Water Quality Standards (40 CFR 230.10(a)(b)(1) "no discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution an dispersion, to violations of any applicable State water quality standard").	USEPA	Cooperating
The topic sentence concluding that there would be no substantial, long-term increase in mercury or methylmercury concentrations or loads in the Delta is inconsistent with the preceding sentence that states that the potential for methylmercury creation in the Delta is adverse and previous statements in this section that the Delta does not have any assimilative capacity for increased loads of methylmercury transported to the Delta or formed within the Delta. The CEQA conclusion also appears to be inconsistent with the general understanding that restoring 20K acres of seasonal wetlands in Yolo Bypass will methylate mercury in the sediments and could become the largest source of methylmercury to the Delta when the bypass is flooded. Further explanation of the reason for this conclusion would be helpful. Or perhaps the topic sentence in the CEQA conclusion paragraph is an error?	USEPA	Cooperating
Please explain why the conclusions about cumulative water quality analyses are different than conclusions about water quality impacts from preferred operations: examples include dissolved oxygen, pesticides, mercury, and selenium.	USEPA	Cooperating

Making beneficial use impairments measurably worse and exceeding EC objectives present significant challenges for concluding that the preferred alternative protects agriculture and aquatic life beneficial uses and the Delta ecosystem. These impacts are also significant CWA permitting challenges, see previous comment on chloride and bromide.	USEPA	Cooperating
We recommend modifying the text to explain why mitigation measures are not available to the applicant. It seems that increasing flows is a mitigation measure that is available to the project applicant. Although doing so may mean that operations change enough to be considered a separate alternative, but the action of increasing flows is possible. This sentence suggests that the action is not something that could be done. It can be done, which makes the negative impact something that can be mitigated. It would be useful to remind the reader of the selection criterion in Chapter 3A which restricts operational elements of the CM1 alternatives to those that do not require changes to water rights other than CVP/SWP contractors. This seems to be the primary reason increased flows are not chosen as a potential source for mitigation.	USEPA	Cooperating
The comparison of the tables underscores how little information we have about water quality in the Delta. This is acknowledged in the narrative. It must be remembered that assumptions are being made with no more than a snapshot of one day's measurements in some cases. These point strongly to the need to act conservatively until current conditions are better understood through more robust monitoring, and the impacts of the project alternative can be predicted with reasonable confidence.	USEPA	Cooperating
The San Joaquin River currently contributes total ~10-15% of the flow to the Delta. The question is how much will that percentage change as a result of the project? Lower Sacramento River flow will increase the impact of higher selenium concentrations from the San Joaquin.	USEPA	Cooperating

The food web preference of bass for insects explains why there was "….no difference in bass selenium concentrations in the Sacramento river at Rio Vista and in the San Joaquin River at Vernalis…" The statement that "…the reasons for this difference are unknown" suggests a lack of understanding of the basic assumptions of the selenium ecological model, i.e., that different food webs biomagnify selenium to greater or lesser extents.	USEPA	Cooperating
The comment is made that nonpoint selenium sources in the San Joaquin Valley will be controlled through a TMDL. While it is true that the flows from the Grassland Bypass Project have reduced selenium inputs to the San Joaquin and, thus, the Delta, they have not yet achieved the TMDL limits. The project has had two extensions thus far, and has a "due date" of 2019. Besides the Grassland Area, the Westlands Area, which has not been able to discharge to the San Joaquin for many years, will receive drainage service by the US Bureau of Reclamation. The outcome is not certain for either of these areas to be able to meet TMDL limits that were set many years ago. Again, great progress has been made in the Grassland Area, but to imply that that the San Joaquin source will not continue to be an issue is rather speculative. The uncertainty around the issue should be acknowledged in the analysis.	USEPA	Cooperating
It is well established that wetlands and other water bodies where flows are impeded by physical and biological barriers increase residence time and thus the likelihood of increasing the biotransformation of selenium sources. Proposing that the wetlands might be the problem implies that non-natural means (reducing access by wildlife, reducing organic matter build up) would be better suited as mitigation measures. This places the emphasis on the effect, rather than the cause. The Delta needs good quality water to support a healthy, non-selenium impacted ecosystem. Discussion of potential source-related solutions, such as delivering more low selenium water from Friant Dam to the San Joaquin River would be more realistic from an environmental perspective than developing wetlands where wildlife would not be welcome.	USEPA	Cooperating

The Kd values used (see Table 5M at page 8M-19) are too low; this tends to underestimate bioaccumulation. The values range from 1000 to 1760 for models 1 -8, and then 2840 for Model 9. EPA uses using Kd values of between 3000 and 5900 for EPA delta modeling (the actual range is much larger – approx. 1,300 – 13,000).	USEPA	Cooperating
The species used are largemouth bass which are not good bioaccumulators and are not particularly sensitive to selenium in their diet. A more sensitive species that bioaccumulates selenium, e.g., salmon or trout (both very toxicologically sensitive to selenium) would be a more appropriate indicator.	USEPA	Cooperating

Response	Comment Type	Status
Appendix 8C fully explains the screening process for constituents assessed.	E	N
An executive summary of the chapter showing comparisons of the various alternatives is planned for the final EIR, but will likely not be incorporated into the draft EIR.	P	N
The discussion related to selenium criteria is in the selenium section (8.1.3.15), where and USEPA's Action Plan for Water Quality Challenges in the San Francisco Bay/Sacramento-San Joaquin Estuary are discussed.	T	M

All of the issues addressed in this comment relate to fish and aquatic resources habitat issues. Section 8.4.2 refers readers to Chapter 11 for further discussion of these effects.	P	N	
Ch 8 is for WQ changes, Ch 5 discusses outflow issues, more substantive discussion of Delta outflow in this chapter is unnecessary	I	N	
All of the issues addressed in this comment relate to fish and aquatic resources habitat issues. Section 8.4.2 refers readers to Chapter 11 for further discussion of these effects.	P	N	
See Table 8-39. All applicable criteria and thresholds, including the 2009 draft, were considered.	P	N	

Potential exceedances of bromide standards are identified primarily for Barker Slough. This effect on M&I uses would be addressed by implementing measures designed to offset water supply effects. See Other Commitments in Appendix 3B.	E	N	Similar to contractor's conc
This chapter does not analyze water quality effects as it pertains to aquatic habitat or the Delta ecosystem. For this bromide analysis, the signficance determination is based only on a potential effect on municipal beneficial uses not fish and wildlife beneficial uses. Effects of an alternative on fish and aquatic resources are evaluated in Chapter 11. It is unclear what the connection is between chloride effects and Section 404. Please clarify.	E	N	This seems similar to USACE's comments re permitting issues.
SIMILAR TO A USFWS COMMENT - ALREADY ADDRESSED; minor clarifications needed in CEQA summary para - CM1 no effect; summary primarily needs to address restoration as the basis of the SU determination	E	D	
Uncertain about comment - overall, cumulative is consistent with CEQA guidance and determinations are consistent with those for preferred alternative....different significance determinations can be reached for constituents, compared to the direct effects, because only the increment of the project is being assessed	E	N	

This chapter does not analyze water quality effects as it pertains to aquatic habitat or the Delta ecosystem. For this EC analysis, the signficance determination is based only on a potential effect on municipal beneficial uses not fish and wildlife beneficial uses. Effects of an alternative on fish and aquatic resources are evaluated in Chapter 11.	P	N	This seems similar to USACE's comments re permitting issues.
It is unclear what the connection is between chloride effects and Section 404. Please clarify.	P	M	
Se analysis is conservative & uses best available information. no change in approach is warranted.	P	N	
Se is assessed with fingerprinting, so flow changes at SJR are accounted for in the assessement	T	N	

"the reasons for this difference are unknown" refers to higher selenium in the river systems in 2007 than normal. However, earlier in the paragraph, similarities between the Sacramento and San Joaquin River are discussed, and it is clearly stated that this was unexpected because the SJR has higher Se concentrations.	I	N	
TMDL uncertainty discussion could be added; but would not change the impact significance determinations - i.e., signif. already with the assumptions/uptake modeling.	P	M	
This analysis was substantially revised with input by USFWS and the other federal lead agencies (see Impact WQ-26). Existing source control projects, selenium TMDL and the flows through the restoration sites which ensure limited water residence times are expected to result in less than significant impacts on fish and wildlife residing in restoration areas. Additionally, this analysis is presented programmatically and additional water quality analysis will be conducted as restoration sites are proposed.	P	D	

The Kd values used in the models were derived from Lucas and Stewart (2007), as explained in Secion M.3.1, and then adjusted to calibrate the model for dry years (Model 9). Using the Kd value of 1,760 gave a reasonable fit for wet years (Model 8) when comparing the modeled values for largemouth bass to the data for 2000 (Figure M-2) without adjustment of the Kd. Additional analysis of selenium bioaccumulation in sturgeon at the two western-most locations in the Delta (Sacramento River at Mallard Island and San Joaquin River at Antioch) using Kd values of 3,317 and 5,986 from Table 1 of Presser and Luoma (March 2013; Ecosystem-scale Selenium Model for the San Francisco Bay-Delta Regional Ecosystem Restoration Implementation Plan) will be included in an addendum to this appendix.	I	N	
Revisions being made to the selenium assessment will include more sensitive food webs/species (i.e., sturgeon)	I	D	Have RBI take a look and re

erns.

ference where this analysis was inserted for sturgeon.